2/2 020 UNCLASSIFIED PROCESSING DATE-+300CT70 CIRC ACCESSION NU-APO103807 ABSTRACT/EXTRACT--(U) GP-O-ABSTRACT. THE MEASUREMENTS OF LOCAL BUBBLING RATES AND GAS CENTENT WERE PERFORMED IN A CIRCULAR COLUMN (DIAM. 100 MM) NAD IN A RECTANGULAR ONE (270 TIMES 180 MM) AT HEIGHTS OF BUBBLING LAYER FORM 200 TO 400 MM. THE GASEOUS MEDIUM WAS AIR PASSING THROUGH PERFORATED GRID PLATES (HOLES OF DIAM. 1.5 AND 3.2 MM, FREE AREA 1,03; AND 18,5PERCENT). THE 2ND PLATE WAS INSTALLED FOR GAS VELOCITIES GREATER THAN 0,25 M-SEC. A THIN GLAZED MO NEEDLE (DIAM. SIMILAR TO 1.3) WAS INSERTED INTO THE BUBBLING LAYER THROUGH A HOLE IN THE COLUMN WALL. THIS NEEDLE WAS CONNECTED TO A BATTERY (1.5-3V) AND AN OSCILLOGRAPH AND THE CIRCUIT WAS CLOSED BY THE SLIGHTLY ACIDIC LIQ. IN THE COLUMN. FROM THE OSCILLOGRAM COULD BE READ THE NO. OF INTERRUPTIONS AND THEIR DURATION. THE BUBBLING RATE AND THE GAS CONTENT WERE THEN EASILY CALCD. THE EXPTL. CONDITIONS: WATER, ETCH, SACCHAROSE SOLNS. (CONCN. 36-66PERCENT); KINEMATIC VISCOSITY 0.65 TIMES 10 PRIME6 NEGATIVE MINUS 2.1 TIMES 10 PRIME4 NEGATIVE M PRIME2-SEC; INTERFACIAL TENSION FROM 7.0-2.2) TIMES 10 PRIMES NEGATIVE KP-M; GAS VELOCITY 0.01-1.5 M-SEC ON THE FREE CRUSS SECTION. THE AV GAS CONTENT ESTD. FROM EXPTL. RESULTS IS IN BEST ACCORDANCE WITH THE THEORY FROM ALZENBUD AND DILMAN (PLUS OR MINUS 30PERCENT). THE EFFECT OF THE COALESCENCE OF SMALL BUBBLES IS SHOWN. FACILITY: GOS. NAUCH. ISSLED. PROEKT. INST. AZOTIN-PROM. PROD. URG. SIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 048

UNCLASSIFIED

PROCESSING DATE--20NOV76

TITLE--HEAT TRANSFER FROM A WALL TO A BUBBLING LAYER -U-AUTHOR-(02)-IVANOV, M.YE., BYKOV, V.P.

CCUNTRY OF INFO-USSR

SCURCE-TECR. CSN. KHIP. TEKHNOL. 1970, 4(2), 239-44

DATE PUBLISHED ----- 70

SUBJECT AREAS--PHYSICS

TOPIC TAGS-HEAT TRANSFER THEORY, HEAT TRANSFER, TURBULENT FLOW, MODEL, HEAT TRANSFER COEFFICENT, MATHEMATIC ANALYSIS

CONTROL MARKING-NO RESTRICTIONS

DGCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1997/1702

STEP NO--UR/0455/70/004/002/0239/0244

CIRC ACCESSION NG--AP0120414

microscopic de la mante de

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

2/2 048 UNCLASSIFIED CIRC ACCESSION NO-AP0120414 PROCESSING DATE-- 20NOV70 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE HEAT TRANSFER BETWEEN THE WALL OF A HEATING BODY, IN THE FORM OF A PLATE (180 AND 20 MM HIGH) OR A CYLINDER (90.25 AND 4 MM DIAM.), AND A LAYER OF LIQ. THROUGH WHICH WAS BUBBLED A GAS AT A VELOCITY (W) OF 0.011-3.7 THREE DIFFERENT TYPES OF HEAT TRANSFER WERE ASSUMED: SURFACE AGJACNET TO THE VERTICAL LAYER BETWEEN THE BUBBLES. THE (1) ON THE MECHANISM OF HEAT TRANSFER IS SIMILAR TO THAT ON A SURFACE AROUND WHICH TERE IS TURBULENT FLOW. (2) ON THELIQ. LAYER SURFACE SURFACE BETWEEN THE BUBBLE AND THE WALL, THE HEAT TRANSFER IS OF AN UNSTEADY STATE NATURE. (3) IN THE VERTICAL LAYER BETWEEN GAS BUBBLES, WHICH IS NOT INFLUENCED MUCH BY THEIR MOVEMENT. THE HEAT TRANSFER IS CAUSED BY CONVECTION. ON THE BASIS OF THIS MODEL, AN EQUATION FOR THE HEAT TRANSFER COEFF. WAS DERIVED. THE DEVIATIONS OF THE CALCO. FROM THE EXPTL. VALUES OF THE HEAT TRANSFER COEFFS. WERE LESS THAN 25PERCENT. THE HEAT TRANSFER COEFFS. ALONG THE PERIMETER OF THE HEATING CYLINDER WERE EXPTL. DETD. AND THE MICROBOILING ON THE SURFACE AT A HIGH HEAT FACILITY: GOS. NAUCH .- ISSLED. PROEKT. INST. AZOTN. PROM. PROD. ORG. SIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 541.183

BYKOV, V.T., TYURIN, V.M., Far Eastern State University, Vladivostok, Ministry of Higher and Secondary Specialized Education RSFSR

"Adsorption of a Vapor Mixture Under Dynamic Conditions. IV. Investigation of the Adsorption of a Mixture of n-Heptane and Carbon Tetrachloride Vapors on Natural Tripoli as a Sorbent"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 3, Mar 70, pp 805-807

Abstract: The authors studied the dynamics of adsorption of heptane and carbon tetrachloride. For initial concentrations which are nearly the same, the time to breakthrough is greater for heptane than for carbon tetrachloride, and the slope of the elution curve at the half concentration point is lower. The isotherms for sorption of the given materials on tripolo were plotted up to p/p3 = 0.3, and the isosteric heats and changes in differential entropy were calculated. It was found that heptane adsorption is accompanied by a large change in entropy. The dynamics of mixtures of heptane and carbon tetrachloride was studied, and the elution curves were plotted for each of the components of the mixture. The enrichment of carbon tetrachloride depends on its content in the heptane mixture. The slope of the elution curve for heptaine at the half concentration point is less for adsorption in the mixture than for individual sorption.

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SYNTHESIS AND STUDIES OF POLYFERROMONUHALDPHENYLSILOXANES -U-

AUTHOR-(03) BYKOY, V.T., AVILOVA, T.P., SHAPKIN, N.P.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 724-9

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, SILOXANE, BENZENE DERIVATIVE, HYDROLYSIS, CHEMICAL REACTION KINETICS, BROMINATED ORGANIC COMPOUND, ORGANOIRON COMPOUND, CHLORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3006/1260

STEP NO--UR/0459/70/012/004/0724/0729

CIRC ACCESSION NO--APO134934

UNCLASSIFIED

2/2

018

CIRC ACCESSION NO--APO134934

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT.

POLY(FERRO(MONOCHLOROPHENYL)SILOXANES) (I) AND

POLY(FERRO(MONOBROMOPHENYL)SILOXANES) (II) WERE OBTAINED BY A REACTION

NAOH, FECL SUB3; AND ALUM. THE YIELD OF I AND II INCREASED, WHEREAS FE

THE REACTION. HYDROLYSIS KINETICS OF I AND II SUGGESTED THAT THE

CLEAVAGE RATE OF THE SI-O-FE BOND AT THE LIG. LIG. INTERFACE WAS A

FUNCTION OF THE DIFFUSION RATE. BOTH I AND II WERE STABLE TO

FACILITY: DAL'NEVOST. GOS. UNIV., VLADIVOSTOK, USSR.

UNCLASSIFIED

THE RESIDENCE AND ASSESSMENT OF THE PROPERTY O

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

UNCLASSIFIED PROCESSING DATE--20NUV/O
TITLE--ADSCRPTION OF VAPOR MIXTURES UNDER DYNAMIC CUNDITIONS. IV.
ADSCRPTION OF VAPOR MIXTURES OF N HEPTANE AND CARBON TETRACHLORIDE ON A

AUTHOR-(02)-BYKOV, V.T., TYURIN, V.M.

COUNTRY OF INFO--USSR

SGURCE--ZH. FIZ. KHIM. 1970, 44(3), 805-7

DATE PUBLISHED ----- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADSORPTION, HEPTANE, CARBON TETRACHLORIDE, ENTROPY, CHEMICAL REACTION RATE

CONTROL MARKING--NO RESTRICTIONS

DCCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3004/2026

STEP NO--UR/0076/70/044/003/0805/0807

CIRC ACCESSION NG--APO132284

UNCLASSIFIED

PROCESSING DATE--20NOV70 UNCLASSIFIED 2/2 022 CIRC ACCESSION NO--APOL32234 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPTS. WERE CARRIED OUT IN 70 MM COLUMN, CIAM. 30 MM, FILLED WITH 48.09 G TRIPOLITE. N SERVED AS CARRIER GAS AT FLOW RATE 80 CM PRIME3-MIN. THE CONCNS. OF HEPTANE AND CCL SUB4 IN N WERE 0.38-1.87 AND 1.56-4.5 MILLIMOLE, RESP.-L. N. THE ADSCRPTION OF CCL SUB4 WAS LUWER THAN THAT OF HEPTANE AND THE SLOPE OF THE ACSORPTION CURVE AT JNE HALF COLUMN SATN. WAS ALSO LOWER. SURPTION UF CCL SUB4 IS EXPLAINED BY THE FACT THAT CCL SUB4 MOLS. ARE SORBED BY THE NEG. SIDE OF THE DIPOLE, THE HEPTANE MOLS. BY THE POS. SIDE OF THE DIPOLE, AND THE HYDRATED SURFACE OF THE ADSORBENT STIMULATES, THROUGH CH GROUPS, THE ADSORPTION OF HEPTANE. THE THERMODYNAMIC CHARACTERISTICS OF THE SYSTEMS WERE ESTD. FROM THE ISOTHERMS IN THE INTERVAL OF P-P SUB8 LOWER THAN 0.3 AT 25 AND THE ISOTERIC HEATS WERE DETD. FOR ONE HALF ADSORBENT SATN. 45DEGREES. (10.9 AND 9.7 KCAL-MOLE FOR HEPTANE AND CCL SUB4. RESP.). THE DIFFERENTIAL ENTROPIES (LIQ. STATE TAKEN AS STANDARD) WERE PLUS 0.6 AND MINUS 4 CAL-MOLE DEGREE FOR CCL SUB4 ADN HEPTANE, RESP. THE MOBILITY IN THE AUSCRUED STATE IS HIGHER FOR CCL SUB4 THAN FOR HEPTANE MOLS. A POTENTIAL BARRIER HINDERS THE HEPTANE MOTION. THE ADSORPTION OF CCL SUB4 HEPTANE MIXTS. DEPENDS ON THE STARTING COMPN. OF THE MIXT. SLOPE OF THE ADSORPTION CURVE FOR HEPTANE ADSORPTION IN MIXTS. DECREASES FACILITY: DAL'NEVOST. GOS. IF THE MIXT. ALSO CONTAINS CCL SUB4. UNIV., VLADIVOSTOK, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

USSR

UDC: 518.5:621.372.061.001.57.

BOOK

BYKOV Vitaliv Vasil'vevich

TSIFROVOYE MODELIROVANIYE V STATISTICHESKOY RADIOTEKHNIKE (Digital Modeling in Statistical Radio Engineering), Moscow, "Sovetskoye Radio", 1971, 328 pp, illus, biblio, subj. index, 9 500 copies printed

The book presents methods of mathematical modeling of processes which take place in radio systems by using general-purpose digital computers. Economic algorithms are presented for digital modeling of radio signals, radio interference, a broad class of random processes and processes of signal and noise conversion with passage through linear and nonlinear systems. Consideration is given to examples of using digital modeling for solving problems in statistical radio engineering.

The book is written for specialists engaged in using computer technology for research in the area of statistical radio engineering, radar, radio physics, automatic control theory and other branches of science and technology. The book may be of use to graduates and upper-classmen in colleges and universities.

Contents Page 1/9

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

5. Concluding Remarks 1.5. Modeling of Random Vectors With Respect to Given Multidimensional Distributions 1. The Method of Angular Distributions 2. Neumann's Method 1.6. Modeling of Random Vectors Within the Framework of Correla-	26 27 27 28
4. Some Special Methods of Modeling Bank	22 24
	19 21
1.4. Modeling of Random Quantities With a Given Distribution Law 1. Method of Nonlinear Conversion Inverse to the Distribution Function 2. Neumann's Method	18
	17
1.3. Modeling of Functions Which Depart of Processes	12 15
Chapter 1 MODELING OF RADIO SIGNALS AND RADIO INTERFERENCE 1.1. Formulation of the Problem	6
Introduction	. •
BYKOV, V. V., TSIFROVOYE MODELIROVANIYE V STATISTICHESKOY RADIOTEKHNIKE Moscow, "Sov. Radio", 1971	

USSR BYKOV, V. V., TSIFROVOYE MODELIROVANIYE V STATISTICHESKOY RADIOTEKHNIKE, Moscow, "Sov. Radio", 1971	
1. The Method of Linear Conversion 2. The Method of Canonical Expansions 3. The Method of Expansion in a Fourier Series 1.7. Error in Restoration of Continuous Signals From Discrete Data 1. Basic Relations 2. Optimum Interpolating Filters 3. Special Cases Chapter 2 MODELING OF TYPICAL RANDOM PROCESSES	29 30 32 37 41 44 48
2.2. Modeling of Stationary Random Processes by the Method of Sliding	55
1. Derivation of Weight Coefficients by Solving a Nonlinear	50
2. Deriving Weight Coefficients by a Fourier Series Expansion	is
of the Spectral Density Function	_
3. Derivation of Weight Coefficients by the Factoring Method 71	L _‡

USSR		
BYKOV, Moscow,	V. V., TSIFROVOYE MODELIROVANIYE V STATISTICHESKOY RADIOTEKHNIKE "Sov. Radio", 1971	
	4. Some Special Methods of Deriving Weight Coefficients Modeling of Stationary Random Processes Using Recument Diff	79
	1. Finding the Parameters of the Recurrent Algorithms by the	80
	2. Finding the Parameters of the Recurent Algorithms by the	81
2.4	Modeling of Stationary Normal Randow Processes at Normal	89
	Comparative Characteristics of Methods of Modeling Statisman	96
	Algorithms for Digital Modeling of Stationary Normal Random Processes With Frequently Encountered Types of Correlation	97
27	Functions .	99
2.8.	Modeling of Stationary Random Processes	111
	Dimensional Distribution Laws	117
	All Random Process with Uniform Distribution	117
/9	2. Rayleigh Random Process	119

- 90 -

USSR	
BYKOV, V. V., TSIFROVOYE MODELIROVANIYE V STATISTICHESKOY RADIOTEKHNIKE, Moscow, "Sov. Radio", 1971	
5. Random Process With One-Dimensional Distribution has	122 123
2.10. Modeling of Nonstationary Normal Random Processes 1	125 127
2.11. Modeling of Markovian Random Processes 2.12. Modeling of Random Flows 2.13. Modeling of Random Fields	138 149 152 154
Chapter 3 MODELING PROCESSES OF SIGNAL AND NOISE CONVERSION EY LINEAR AND NONLINEAR SYSTEMS	
J. Digital Models of Continuous Linear Dynamic Court in the	64
1. Discretization Using Numerical Integration Formulas 2. Discretization by the Method of Replacing Continuous Sunt	66 69
"'- "Zou ndaractin Lates Pastems	73

USSR	
BYKOV, V. V., TSIFROVOYE MODELIROVANIYE V STATISTICHESKOY RADIOTEKHNIKI Moscow, "Sov. Radio", 1971	<u>E</u> ,
3. Application to Systems With Variable Parameters 4. Concluding Remarks	176
3.3. Modeling of Linear Continuous Dynamic Systems With A	178
"" DITTELENCE FRUNTIONS	179
- inc neonod of z-conversion	181
2. The Tsypkin-Gol'denberg Method	184
or -me regeratiff Del 661 Metudu	186
TODOSCU IV LIPANOV	188
y - accar o recondu	194
or ric hadwed-lithwal Merupo	195
14 AMC DONGLATHETEL BEHNON	195
o. nycmpres	197
on paragraphic characteristics of Methods of Discounts American	
mation	199
3.4. Modeling of Narrow-Band Linear Systems	202
1. The Method of Envelopes. Complex Linear Filters	204
2. Digital Models of Narrow-Band Linear Systems Which are	
Dascu on Discrete Complex Convolution	208
5. Modering of Narrow-Band Linear Systems by Means of Complex	
6/9	

scow, "S	V., TSIFROVOYE MODELIROVANIYE V STATISTICHESKOY RADIOTEKHNIKE DV. Radio", 1971	.>
2. 3. 4. 5. 3.6. Mc	Recurrent Difference Equations Decling of Nonlinear Systems Classification of Nonlinear Systems Modeling of Inertialess Nonlinear Systems Modeling of Inertial Nonlinear Open Functional Systems Modeling of Inertial Nonlinear Closed Functional Systems Modeling of Inertial Nonlinear Nonfunctional Systems Modeling of Typical Nonlinear Conversions of Signals and Interference in Radio Systems Modulation Frequency Conversion	212 217 217 219 219 221 223 - 225 225 225
Sy	Chapter 4 USE OF DIGITAL MODELING FOR SOLVING ME PROBLEMS OF STATISTICAL RADIO ENGINEERING	234

USSR BYKOV. V. V. TSIFROVOVE MODEL I DOMINION	
BYKOV, V. V., TSIFROVOYE MODELIROVANIYE V STATISTICHESKOY RADIOTE Moscow, "Sov. Radio", 1971	KHNIKE,
 lation Has on Radio Receiving Devices Formulation of the Problem Digital Model of a Receiver Organizing Digital Computer Calculations for Determin Statistical Characteristics Some Analytical Estimatos for Calculations 	•• 250 •• 253 ing.
Accuracy of Results of Modeling	y and • • 262
4.3 Use of Digital Modeling for Students B	266
1. Formulation of the Problem 2. Digital Model of a Discriminator for an Automateur	· 277
3. Digital Model of a Discriminator for	. 280
4. Equivalent Functional Circuit of an August 1985	. 287
as a Tracking System	. 288
02	

arang sakarang ang paggapang ang arang ang ang ang ang ang ang ang at ang at ang at ang ang ang ang ang ang an

USSR		
BYKOV, V. V., TSIFROVOYF Moscow, "Sov. Radio", 19	MODELIROVANIYE V STATISTICHESKOY RADIOTEKHNIKE,	
o. Analytical E	stimates of the Effect of Noise on the Charac-	0
1. Some Results	an Automatic Range Finder	
CONCTUSTON	by the Method of Digital Modeling 29	
ricitor (TTT CTCTGS)	* * * * * * * * * * * * * * * * * * * *	-
bublect index	31.	0

9/9

USSR UDC: 621.396.96

BYKOV, V. V., Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

*Effect of Noise on the Characteristics of an Automatic Radar Range Finder With Logarithmic Receiver"

Moscow, Radiotekhnika, Vol 25, No 12, Dec 70, pp 52-58

Abstract: Discrimination and fluctuation characteristics are found for an automatic incoherent radar pulse range finder with logarithmic receiver in the presence of noise interference. The procedure combines the analytical method with modeling on a digital computer. It is found that noise changes the characteristics. The discrimination curve is deformed with an increase in \mathbb{Q}^2 — the signal-to-noise power ratio. However, this deformation is of no practical importance, just as in the case of an automatic range finder with linear receiver. The slope of the discriminator (gain in the feedback loop of the range finder) decreases in inverse proportion to \mathbb{Q}^2 when \mathbb{Q} is greater than 1, the constant of proportionality depending on the relative signal level β in contrast to an automatic range finder with linear receiver, where the slope of the discriminator is inversely proportional to \mathbb{Q} . The dispersion of fluctuations at the discriminator output when \mathbb{Q} is equal to 0.5 or greater is practically independent of the 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

USSR

BYKOV V V Radiotekhnika, Vol 25, No 12, Dec 70, pp 52-58

signal-to-noise ratio. In a range finder with linear receiver, this quantity increases in direct proportion to Q.

2/2

- 54 -

USSR

UDC: 621.394.662.6

BYKOV, V. Ye.

"A Device for Synchronization With Respect to the Working Signal in Multichannel Communications Systems With Phase Keying"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki. No 18, Jun 71, Author's Certificate No 305593, Division H, filed 26 Nov 69, published 4 Jun 71, pp 195-196

Translation: This Author's Certificate introduces a device for synchronization with respect to the working signal in multichannel communications systems with phase keying. The device contains high-frequency and video pulse amplifiers and a multiple-tap magnetostriction delay line. As a distinguishing feature of the patent, the device is designed for extracting information on the boundaries of the message elements of the received signal from the working signal itself while simultaneously simplifying the circuitry. The output of the principal matched filter on the above-mentioned multiple-tap magnetostriction delay line is connected through a detector amplifier and a limiter amplifier to the input of the delay line shaper filter. The output of the shaper filter is connected to one of the inputs 1/2

BYKOV, V. Ye., USSR Author's Certificate No 305593

of the phase keyer, while the other input of the phase keyer is connected to the high-frequency oscillator. The control electrode of this oscillator is connected through a Kipp oscillator and emitter follower to to the input of the shaper filter power amplifier. The output of the phase keyer is connected to the input of the auxiliary matched filter on the multiple-tap magnetostriction delay line. The output of the delay is connected through an amplifier, detector, limiter amplifier and emitter follower to the input of the shaper filter.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

- 60 -

Masers and Lasers

USSR

UDC 621.396.229

BYKOV, V. Ye.

"A Communications Line for the Optical Range"

Mosccy, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296271, division H, filed 12 May 69, published 12 Feb 71, p 193

Translation: This Author's Certificate introduces a communications line for the optical band which consists of a transmitter containing a source of monochromatic plane-polarized emission, an amplitude modulator, polarization modulators, a transmitting optics module and a receiver containing a receiver optics module, beam splitters and a photoreceiver. As a distinguishing feature of the patent, in order to increase the volume of information and reduce cross interference, a birefrigent prism such as a Wollaston prism is installed in the transmitter at the amplitude modulator output. Installed in the receiver after the two series-arranged beam splitters are photoreceivers of orthogonally polarized signals. The sensitized layers in the photoreceivers have a vector photoelectric effect.

1/1

UDC 517.949

BYKOV, Ya. V., ZHIVOGLYADOVA, L. V., Krasnodar Polytechnical Institute

"Concerning the Oscillatory Nature of Solutions of Nonlinear Finite--

Minsk, Differentsial'nyye Uravneniya, Vol 9, No 11, Nov 73, pp 2080-2081

Abstract: The paper establishes sufficient conditions for oscillatory behavior of solutions of the equation $\Delta^2 u(n) + \alpha(n) f[n, u(n), u(n+1)] \Psi[n, u(n), v(n)] + F[n, u(n), u(n+1)] = 0; v(n) \equiv \Delta u(n).$

1/1

USSR

* VDC 517.949

BYKOV, Ya. V. and SHEVTSOV, Ye. I.

"Sufficient Conditions for the Oscillatory State of Solutions of Nonlinear Equations in Finite Differences"

Minsk, Differentsial'nyye Uravneniya, No 12, 1973, pp 2241-2244

Abstract: A function u(n) (n=0,1,2,...) is said to be nonoscillatory if $\exists n_0$ is such that $\forall n \geqslant n_0$ with either u(n) > 0 or u(n) < 0. If this is not the case, u(n) is oscillatory. It is everywhere assumed that functions a(n), $r(n) \neq 0$, f(n,u,v), F(n,u,v) are defined in the region $n \geqslant 0$; $-\infty \langle u,v \langle +\infty \rangle \langle v,v \rangle \rangle \langle v,v \rangle \langle v,v \rangle \langle v,v \rangle \rangle \langle v,v \rangle$

$$b(n) \equiv \sum_{m=1}^{n-1} \frac{1}{r(m)} \to +\infty$$

as $n \to +\infty$. Based on these assumptions, a number of theorems are proved and sufficient conditions for the oscillation of solutions to

1/1

UDC 517.949

BYKOV, YA. V., and LINENKO, V. G., Krasnodar Polytechnic Institute

"On the Stability of Solutions of Sum-Difference Equations"

Minsk, Differentsial'nyye Uravneniya, Vol 9, No 2, Feb 73, pp 349-354

Abstract: The article studies the stability of solutions of the system of sum-difference equations

$$L[u(n)] = f[n, u(n)] + \sum_{s=0}^{n} F[n, s, u(s)].$$

$$L[u(n)] = u(n+1) - Au(n) - \sum_{m=0}^{n-1} K(n-m-1)u(m).$$

$$K(n) = \sum_{i=1}^{l} Q_{i}(n)r_{i}^{n}, Q_{i}(n) = \sum_{s=0}^{m_{i}} R_{is}u^{(s)}.$$

1/2

BYKOV, YA. V., and LINENKO, V. G., Differentsial nyye Uravneniya, Vol 9, No 2, Feb 73, pp 349-354

A, R_{is} are k-square constant matrices; r_i are constant numbers; $n^{(s)} = n(n-1)$... (n-s+1) is the generalized power s of the number n (n-0,1...); n

2/2

- 12 -

UDC 517.925.32

BYKOV, Ya. V., KIRIY, K. A., Krasnodar Polytechnical Institute

"On Periodic Oscillations With a Large Amplitude. I"

Minsk, Differentsial'nyye Uravneniya, Vol. 8, No. 6, Jun 72, pp 943-952

Abstract: Sufficiency conditions are studied for the existence of periodic solutions of the system of differential equations

$$L[u] = \frac{du}{dt} - Au = f(t) + \sum_{n=1}^{\infty} \mu^n \sum_{k=1}^{mn} F_{n,k}(t) u^k(t), \tag{1}$$

that can be represented in the form

$$u(t, \mu) = \sum_{k=0}^{\infty} v_{k}(t) \mu^{\frac{k-p}{mp-r}} \quad \{v_{0}(t) \in 0\};$$
 (2)

where m > 0 is a fixed number, $P_{nk}(t)u^k(t)$ is a k-linear operation mapping 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

BYKOV, Ya. V., KIRIY, K. A., Differentsial'nyye Uravneniya, Vol. 8, No. 5, Jun 72, pp 943-952

the periodic vector u(t) into a periodic vector, f(t) is periodic, μ is a small parameter, $F_{nk}(t)h_1(t)\dots h_k(t)$ is a symmetric k-linear operation.

tion, p and r > 0 are some whole numbers, f and u are l-dimensional vectors, and A is a constant $l \times l$ matrix. The set of periodic functions represented in form (2) is called class $\Gamma(p, r)$. The amplitudes of periodic solutions of class $\Gamma(p, r)$ increase without limit as $m \to 0$. This paper studies the existence of periodic solutions in classes $\Gamma(1, 4)$, $\Gamma(1, 5)$, and $\Gamma(1, r)$. Theorems are presented showing conditions under which equation (1) does or does not have periodic solutions in each of these classes.

5/5

__),

.USSR

UDC: 517.946

BYKOV, Ya. V., KIRIY, K. A., Krasnodar Polytechnical Institute

"Concerning Branchings of the Solutions of One Class of Nonlinear Partial Differential Equations"

Minsk, Differentsial'nyye Uravneniya, Vol 8, No 9, Sep 72, pp 1627-1638

Abstract: The authors consider sufficient conditions of solvability of the problem

$$U(x_0,y) \equiv u(x,y_0) = 0^*)$$

for the equation

$$L[u] = \frac{\partial^2 u(x, y)}{\partial x \partial y} - Au(a, y) - Bu(x, b) = f(x, y) + \mu F(x, y, u(x, y), \mu);$$
15. B. Small, The second of the secon

where μ is a small parameter; a, b, A, B, x_0, y_0 are constants; $F(x, y, u(x, y), (\mu)$ is a nonlinear operator which is analytical with respect to u(x,y) and the parameter μ ; in particular,

$$F(x, y, u(x, y), \mu) = F_1(x, y, u(x, y), u(a, y), u(x, b), \mu),$$

1/2

USSR

BYKOV, Ya. V., KIRIY, K. A., Differentsial'nyye Uravneniya, Vol 8, No 9, Sep 72, pp 1627-1638

where $F_1(x, y, u_1, u_2, u_3, \mu)$ is an ordinary function which is analytical with respect to the arguments u_1, u_2, u_3, μ . The functions $f(x, y), F(x, y, \omega, \mu)$ are continuous in the closed bounded region D_*

5/5

- 3 -

UDC: 517.925.32

BYKOV. Ya. V., KABULOV, R., Cheboksary State University imeni I. N. Ul'yanov, Samarkand State University imeni S. Ayni

"On Periodic, Large-Amplitude Oscillations of Certain Classes of Monlinear Systems"

Minsk, Differentsial'nyye Uravneniya, Vol 8, No 2, Feb 72, pp 223-229

Abstract: Sufficient conditions are established for the existence of periodic solutions of certain classes of differential equations with amplitudes approaching infinity as $\mu \to 0$:

$$L\left(u\right):=\sum_{p_{e}q>0}A_{p_{e}u^{p}\mu^{q}}.$$

Proofs are given for a number of theorems which guarantee sufficient conditions for the existence of a solution of the form

$$u(\mu) = \sum_{k=0}^{\infty} u_k \mu^{\frac{k-r}{mr}}.$$

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

BYKOV, Ya. V., KABULOV, R., Differentsial'nyye Uravneniya, Vol 8, No 2, Feb 72, pp 223-229

In particular, sufficient conditions are derived for the existence of periodic solutions with large amplitude for nonlinear systems (with and without delay, boundary-value problems, partial differential equations, etc.). Bibliography of four titles.

2/2

- 2 -

UDC 517.917

BYKOV, Ya. V., BOTASHEV, A. I., Institute of Physics and Mathematics, Academy of Sciences, Kirgiz SSR

"Concerning Periodic Solutions of Systems of Difference Equations"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 3, May-June 1970, pp 11-19

Abstract: This study is closely related to a 1959 work by the authors on the existence and structure of periodic solutions of equations in terms of finite differences. In the present work an investigation is made of questions dealing with periodic solutions of systems of difference equations in terms of m-dimensional vectors and a square matrix. Just as in the above-mentioned study, extensive use is made of the structure of the image of a periodic vector.

1/1

BYKOV, Ya. V.; SHAZHALIYEV, T.

"Solvability of the Cauchy Problem for Certain Types of Ordinary Differential Equations

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR: Seriya Fiziko-Matematicheskaya;

ABSTRACT: The authors study sufficient conditions for the existence of solutions of the Cauchy problem u(b) = 0 for the system of differential equations $L[u] = \frac{du(t)}{dt} - A(t)u(t) - B(t)u(a) = f(t) + \mu \overline{\phi}(t, u, \mu), \text{ expressable in the}$

form $u(t, \mu) = \sum_{k=0}^{\infty} u_k(t)\mu^{k/m}$. m is a positive integer; u(t), f(t) are λ -dimensional vectors; a, b are fixed points of the segment [c, d]; A(t), B(t) are χ_{λ} -matrices; $\bar{q}(t, u, \mu)$ is a nonlinear operator transforming the continuous χ_{λ} -vector u(t) into a continuous χ_{λ} -vector, analytic with respect

Seven theorems are presented, and the article includes 8 equations. There are two references.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

UDC 620.10

PROKOSHKIN, D. A., Doctor of Technical Sciences, Professor, BYKOV, Vu. A., Candidate of Technical Sciences, docent, SOKOLENKO, L. I., Graduate Student, and NAZARCHIK, N. A., Candidate of Technical Sciences, Senior Scientific Staff Member, Moscow Higher Technical School imeni N. E. Bauman

"The Influence of Residual Stresses Upon the Magnetic Properties of Hot-Pressed Ferrites"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeníy, Mashinostroyeniye, No 7, 1972, pp $107-1\underline{10}$

Abstract: An investigation is made of the relationship of the magnetic properties of ferrites to internal stresses. It is established that the hot pressing and heat treatment of ferrites bring about the origination of considerable residual internal stresses. It is established that strongly stressed ferrites (hot-pressed, hardened) possess low values of initial magnetic permeability. As a result of the annealing of hot-pressed ferrites, the magnetic permeability increases, and the internal stresses decrease by a factor of about 6.5. 2 figures. 1 table. 3 references.

1/1

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002200520008-2

1/2 029 TITLE--EFFECT OF COOLING CONDITIONS ON THE MACROSTRUCTURE OF A BRASS BAR UNCLASSIFIED PROCESSING DATE--115EP70 . | DURING HORIZONTAL CONTINUOUS CASTING -U-AUTHOR--SLADOSHTEYEV, V.T., SHATAGIN, O.A., RADZIKHOVSKIY, V.A., BYKOVA,

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1) 73-5

DATE PUBLISHED----70

SUBJECT AREAS -- MATERIALS

TOPIC TAGS--BRASS, METAL CASTING, CRYSTAL STRUCTURE, CRYSTALLIZATION, MECHANICAL PROPERTY, METAL COOLING, COOLING RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1986/0502

STEP NO--UR/0136/70/043/001/0073/0075

CIRC ACCESSION NO--APO102597

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2" 2/3 029 UNCLASSIFIED CIRC ACCESSION NO--APO102597 PROCESSING DATE--115EP70 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COOLING CONDITIONS OF A BILLET FORMED IN A CRYSTALLIZER EXERT A DETG. EFFECT ON THE STRUCTURE OF THE CAST METAL. INCREASING THE SOLIDIFICATION RATE RESULTS IN FINER GRAIN SIZE; THIS ENHANCES THE MECH. PROPERTIES. CONTINUOUSLY CAST, HAVE A DENSE STRUCTURE; NO PORES OR OTHER INTERNAL BRASS BILLETS, HORIZONTALLY DEFECTS ARE PRESENT. RESULTS SHOW THAT THE SOLIDIFICATION RATE, WITH OTHER CONDITIONS BEING EQUAL, DEPENDS ON THE SURFACE TEMP. OF THE ROD. THE DEPENDENCE OF THE COOLING (SOLIDIFICATION) RATE ON THE RATE OF WATER FLOW DURING HORIZONTAL CONTINUOUS CASTING OF THE ALLOYS WAS STUDIED. EXPTL. THE COOLING CONDITIONS WERE CHANGED BY CHANGING THE WATER FLOW RATE IN THE CU WATER COOLED JACKET. WITH INCREASING WATER FLOW RATE THE SOLIDIFICATION RATE OF EACH ZONE INCREASES. A SATISFACTORY AGREEMENT WAS OBTAINED BETWEEN EXPTL. AND THEORETICAL DATA.

UNCLASSIFIED

Acc. Nr. AT0050602 Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code 4/8 0148

strength cast froms. Robro, Yu. G.; Bykova, D. I. (Khar'kov. Politekh. Inst., Kharkov. USSR). Tww. Vyssh. Ucheb. Zaved., Chern. Mel. 1970, 13(1), 143-6 (Russ). The effects of alloying addns. were studied on the nitriding of 10 Ce inoculated (Fe-Ce) cast irons cast in 30-mm dry sand molds and normalized with high-temp. tempering after melting in 1-5 kg lab. elec. furnaces. Nitriding in 1, 2, and 3 stages of sample specimens of the cast irons measuring 6 × 9 × 15 mm was particularly effective on alloying with Cr-Al or Cr-Al-Mo. The optimum compn. range was Cr 0.3-0.5, Mo 0.2-0.4, Al 1.0-1.2% corresponding to ultimate tensile strength 90 kg/mm², $\delta = 0.7$ -0.8% and HB = 286-320, compared with 62.0 kg/mm², 1.0%, and 217 for a std. Cr-Ni diesel crankshaft steel.

energen 1819 erretti i ikan eri ener i erretti erretti i erretti i erretti i ili erretti i erretti i erretti i

pc

REEL/FRAME 19810595

UNCLASSIFIED PROCESSING DATE--03JUL7C TITLE--FURIFICATION OF ALLMINUM CHLORIDE. REMOVAL OF IRON IMPURITIES -U-

ALTHOR--NAUMOVA, T.N., BYKOVA, I.G.

CCUNTRY OF INFO--USSR

SCUPCE-ZF. PRIKL. KHIN. (LENINGRAC) 1970, 43(1), 164-6

BATE PUBLISHEE ----- 70

SLEJECT AREAS--CHEMISTRY

TOPIC TAGS-CHEMICAL PURIFICATION, ALLMINUM CHLCRIDE, IRCA, SUBLIMATION

CENTROL MARKING--NO RESTRICTIONS

DECUMENT CLASS--UNCLASSIFIED PROXY RELL/FRAME--1978/1201

STEF NC--LP/C08C/70/043/001/0164/0166

CIFC ACCESSION NO--APOCA6124

thoudssifted

Acc. Nr:

Abstracting Service: 5/70 Ref. Code:
21 R 0080

91810q Purification of aluminum chloride. Removal of iron impurities. Naumova, T. N.: Bykova, I. G. (USSR). Zh. Prikl. Khim. (Leningrad) 1970, 43(1), 164-6 (Russ). A sublimation process is recommended for a thorough sepn. of AlCh from FeCl, impurities. The sublimation temp. is 240° and HCl is used as carrier gas. N is less effective. AlCh contr., 10-% FeCl, can be obtained.

REEL/FRAME
19781201

Acc. NF 0048919 Abstracting Service: Ker. Code: UR 0075

N; Petrov. S. I. (Chem.-Technol. Inst., Moscow, USSR).

28. Anal. Khim. 1970, 25(1), 5-10 (Russ). The single acidity scale according to N.A. Izmailov (1962), pA = pH_p - log₁° H and the relative acidity scale E,' = (E_{1/1}HClO₄ - E_{1/2}K₄NOE)/59, related by the approxin. equation pK, = E,' - log an + aon + (E₁/59), where E₁ is a diffusion phase potential, pH_p is the stread of the scale, γ° H is the activity coeff. of proton in infinite dild. aq. solin., and an + and aon - are the activities of H + and OH ¬, resp., in a half-neutralized solin., were compared. Acidity scales for alcs. are somewhat higher then the pA scales due probably to the incomplete dissorn, of HClO₄. E₁' and pA for McCOEt, McCN, and McSO in the neid range are in good agreement. There is a linear relation between pK, and E₂' for H₁O, ethylene glycolales, ethylenedramine, McCOEt, and McSO, only slightly acidic relative to H₂O in these solvents, E₁' is higher than pK. One of the main causes for low pK, is the ionization of H₂O molecules, small amts. of which are present in the solvent. The pK_a estd. on the basis of E₁' were as follows: ≥24 for HCONMe₂, ≥26 for McSO, ≥30 for McCN, ≥31 for McCOEt, ≥23 for test-BuOH, and ≥22 for iso-PrOH.

У

REEL/FRAME 19800691

1nt

UDC 547.26'118

PUDOVIK, A. N., CHERKASOV, R. A., BYKOVA, I. V., YEVSTAF'YEV, G. I., ZEMSKAYA, Z. I., NAZYPOV, M. N.

"Interaction of Tetraalkyl(aryl)stannates with Phosphorus Dithio Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 76-80

Abstract: The interaction of tetraethyl lead with dithio acids of phosphorus taking place with breaking of one, two or three Pb-C bonds and the formation of the corresponding organolead dithiophosphates has been described [A. N. Pudovik, ZhOKh, No 41, 1472, 1971]. As a continuation of this research, a study was made of the reaction of phosphorus dithio acids with the tetraalkyl derivatives of tin. The dealkylation of the tetraalkyl(aryl)stannates of phosphorus dithio acids takes place with breaking of the Sn-C bond and lead to the formation of trialkyl(aryl)stannyl derivatives of dithiophosphates and phosphonates, The methods of gas adsorption chromatography and differentialthermal analysis were used to study the relative reactivity of tetraalkyl (aryl)stannates. The ease of stripping off the radicals connected to the tin atom decreases in the following series C_6H_5 , C_2H_5 , C_3H_7 , C_4H_9 . Preliminary data are presented on the fungicidal and fungistatic activity of organotin diothiophosphates and phosphonates, their anthelmintic and insecticidal activities. High activities in all these areas were generally demonstrated. 1/1

USSR

UDC 539.41669.017

BRUN, M. YA., KUDRYASHOV, V. G., and BYKOVA, L. A., Moscow

"Effect of Structure on the Tendency of VT9 Titanium Alloy Toward Brittle Fracture"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul/Aug 72, pp 74-79

Abstract: Results are presented from an investigation of the effect of the $\mathbb{C}($ and $\mathbb{C})$ structure of VT9 titanium alloy on a series of criteria characterizing the strength by the onset and the propagation of fractures at room temperature. The plastic and brittle yield points were determined during the application of a double shock load and during the static deflection of the samples by recording the dynamic deformation. The parameters measured included actual tensile strength (S_k) , temporary resistance (\mathcal{C}_e) and resistance to small plastic deformation $(\mathcal{C}_{0.001}, \mathcal{C}_{0.01}, \mathcal{C}_{0.1})$, modulus of deformational hardening $(D = d \mathcal{C}/d \delta)$, comparative extension (\mathcal{E}_e) , comparative cross-sectional constriction (ψ) , and uniform and localized constriction (ψ) and ψ_1 . Significant differences were observed between fine-grained and coarse-grained samples.

- 56 -

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV/O
TITLE--INFLUENCE OF THE TITRANT SOLVENT DURING ACID BASE TITRATION OF
NGNAGUECUS SCLUTICNS -U-

ACTHOR-(03)-BYKOVA, L.N., ARDASHNIKOVA, V.D., BLAGDDATSKAYA, Z.G.

CCUNTRY OF INFC--USSR .

SCURCE-ZH. PRIKL. KHIM. (LENTNGRAD) 1970, 43(5), 1155-7

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS-TITRATION, SOLVENT ACTION, METHANGL, PROPANOL, BENZENE

CONTROL MARKING-NO RESTRICTIONS

DGCUMENT CLASS--UNCLASSIFIED PRCXY REEL/FRAME--3004/1953

STEP NO--UR/C080/70/043/005/1155/1157

CIRC ACCESSION NO--APO132214

UNGLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70 CIRC ACCESSION NO--APO132214

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE MAX. DECREASE IN THE BASIC LIMIT GF THE ACICITY SCALE OF THE SOLVENT WAS OBSERVED ON ADDING MECH, WHICH HAS MCRE PROMINENT ACID PROPERTIES COMPARED TO ISO-PROH AND TERT-BUOH. C SUBG H SUBG ADDN. DOES NOT DECREASE THE BASIC LIMIT OF THE ACIDITY SCALE OF THE SOLVENT UP TO GOPERCENT (VOL.-VOL.). FOR TITRATING QUARTERNAKY AMMONIUM SALTS THE USE OF MIXED SOLVENT CONTG. C SUBG H SUBG AND AN ALC. WITH LESS ACIDIC PROPERTIES WAS SUGGESTED.

UNCLASSIFIED

USSR

UDC: 621.396.677(088.8)

TSALENCHUK, M. R., SAMARYANOVA, M. A., SHALINOVA, G. F., BYKOVA, T. A., IVANOV, A. F.

"A Device for Monitoring the Working Order of High-Frequency Channels"

USSR Author's Certificate No 265983, filed 10 Jun 68, published 3 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B103 P)

Translation: The proposed device contains a two-terminal plug to which a high-frequency oscillator is connected with DC power supplies. To simplify and speed up the monitoring process, the oscillator and power supplies are enclosed in the housing of the plug holder.

1/1

USSR



UDC 669.243.87

GUDIMA, N. V., CHEMLEV, V. A., BYKOVA, T. D., and ZOTKOV, O. M.

"Effect of Current Density on Production Cost in Electrolytic Nickel Refining"

Moscow, Tsvetnyye Metally, No 3, Mar 70, pp 29-33

Abstract: The production of nickel in electrolytic shops may be raised by increasing the number of electrolyzers, raising the current density, and simultaneously adjusting the principal operational parameters, such as nickel concentration, electrolyte salt composition, and the circulation rate. The optimum current density must be determined for each individual plant taking into consideration the specific process technology and changes in various items of expenditures as a function of current density. With the shop expenditures being a major portion (40-45%) of the total conversion cost, it was the objective of this paper to determine the correlation of current density and shop expenditures on the basis of report data of an electrolytic shop. It was also essential to establish the factors, other than current density, affecting changes in the absolute shop expenditures, eliminate these effects, and arrive at "net" (cleaned) expenditures. Depending on production volume, the items subject to changes are: within-plant transport, maintenance of basic facilities, current repairs, and depreciation.

1/2

117 -

USSR

GUDIMA, N. V., et al., Tsvetnyye Metally, No 3, Mar 70, pp 29-33

Within the period of analysis, the production volume at this specific shop was affected by the number of electrolyzers, current density, cathode surface, current yield, and extensive utilization of electrolyzers. Formulas are cited for determining shop expenditures as a function of current density. Calculation shows that an increase in current density from 241.3 amp/m² to 388.9 amp/m² and the resultant higher production volume made it possible to reduce the shop costs of 1 ton of cathodic nickel by 45.4%.

2/2

1

USSR

UDC 542.953:661.718.1

IVANOV, B. YE., KUDRYAVTSEVA, L. A., ZYABLIKOVA, T. A., BYKOVA, T. G., and GOL DFARB, E. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov of the Academy of Sciences USSR

"Condensation of Diethylphosphorous Acid with Formaldehyde and Triethyl Phosphite"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, 1971, pp 1497-1502

Abstract: Condensation was carried out in the ternary system triethyl phosphite (TEP)-formaldehyde-diethylphosphorous acid (DEP). The formation of the product, diethyl ester of ethylphosphonic acid (I), results from the partial isomerization of triethyl phosphite in the presence of diethylphosphorous acid. Other products formed included: diethyl ester of alpha-hydroxymethylphosphonic acid, diethylphosphonomethyl diethyl phosphite, bis-(diethylphosphone) methyl ester, 2,5-dioxa-2,5-dihydroxy-1,4,2,5-dioxadiphospholenane, and a product with the gross formula C8H2O06P2. The latter is probably a mixture of esters of hypophosphoric and isohypophosphoric acids. The structure of each product was proven by chemical and physical methods. These included nuclear magnetic

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

USSR

IVANOV, B. Ye, Izvestiya Akademii Nauk SSSR, Seriya Knimicheskaya, No 7, 1971, pp 1497-1502

resonance spectra, melting-point tests, and infrared spectra. Different quantitative ratios of the ternary system components were combined to provide data for the corresponding multi-product yield percentages for each ternary component ratio used.

2/2

_ 97 **_**

USSR

UDC 524.91+547.461.3+547.241

IVANOV, B. Ye., KUDRYAVTSEVA, L. A., and BYKOVA T. G., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences of the USSR

"Interaction of $\alpha-Hydroxymethylmalonic and Bis-(\alpha-hydroxymethyl)malonic Esters With Trialkylphosphites"$

Moscow, IAN SSSR, Seriya Khimicheskaya, No 9, Sep 70, pp 2,063-2,067

Abstract: The authors investigated interaction of α -hydroxymethylmalonic and bis-(α -hydroxymethyl)malonic esters with triethylphosphite, trimethylphosphite and diethylchlorophosphite. Diethyl ester of 2,2-dicarbethoxyethylphosphinic acid is produced by reacting α -hydroxymethylmalonic ester with triethylphosphite and diethylchlorophosphite. 2-Alkoxy-2-oxo-4, 4-dicarbethoxy-1-oxa-2-phospholans are synthesized by interacting bis-(α -hydroxymethyl)malonic ester with trialkylphosphites and diethylchlorophosphite.

1/1

1/2 013

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--NA, RB-BR, CL AND RB, CS-BR, CL SYSTEMS -U-

AUTHOR-(02)-DIOGENOV, G.G., BYKOVA, T.YE.

3

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1680-3

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, SOLID SOLUTION, X RAY DIFFRACTION PATTERN, BROMIDE, CESIUM CHLORIDE, RUBIDIUM CHLORIDE, SODIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3006/1386

STEP NO--UR/0078/70/015/006/1680/1683

CIRC ACCESSION NO--APO135060

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70 CIRC ACCESSION NO--APO135060 ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. SQUARE PHASE DIAGRAMS OF RBCL RBBR CSCL CSBR AND NACL NABR RBBR RBCL ARE CONSTRUCTED. THE SYSTEMS ARE DE THE REVERSIBLE MUTUAL TYPE AND FORM 2 FIELDS OF SOLID SOLNS. THE DATA FOR THE BINARY RECL REER SYSTEM IS TABULATED AND ITS X RAY DIFFRACTION PATTERN IS GIVEN.

2/2 013

UNCLASSIFIED

Molecular Biology

USSR UDC 578.6

YERSHOV, F. I., <u>BYKOVSKIY</u>, A. F., URYVAYEV, L. V., SOKOLOVA, T. M., and ZHDANOV, V. M., Member Academy of Medical Sciences USSR, Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"The Morphology of Hybrid Ribonucleoprotein Complexes (Pseudoviruses)"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 5, 1973, pp 1206-1207

Abstract: It was established in earlier work by Yershov et al (DAN SSSR, Vol 189, No 4, 882, 1969) that addition of the infectious RNA of the virus of Venezuelan equine encephalomyelitis to the fraction S 105 of the hyaloplasm of chick embryo fibroblasts results in the formation of hybrid ribonucleoprotein (RNP) complexes (pseudoviruses) that consist of the virus RNA and cell proteins and differ from the virion RNP in regard to their sedimentation distribution and floating density. They are insensitive to the action of antivirus antibodies, but at the same time exhibit infectious activity. In the work reported at present, the morphology of the pseudoviruses in question was studied by electron microscopy. It was established that the optimum ratio for the formation of the RNP complexes was 400 gamma virus RNA to 1.6 mg protein. On purification of the RNP complexes (pseudoviruses) by centrifuging in a 10-30% density gradient of sucrose dissolved 1/2

USSR

YERSHOV, F. I., et al., Doklady Akademii Nauk SSSR, Vol 210, No 5, 1973, pp 1206-1207

in an isotonic phosphate buffer (0.1 M NaCl, 0.01 M phosphate buffer, pH 7.2) the fraction corresponding to the peak of RNP complexes (80 S) was collected and studied by means of an electron microscope. Centrifuging in a CsCl gradient was also carried out. Threads with a diameter of 25-30 Å and bundles of these threads were observed. The hybrid pseudovirus complexes resembled the virus RNP and differed from informophers in size and shape.

2/2

- 32 -

Microbiology

USSR

UDC 576.858.6.083.35.07

ZHDANOV, V. M., BYKOVSKIY. A. F., AL'TSHTEYN, A. D., LOZINSKIY, T. F., URYVAYEV, L. V., VOLKOVA, M. L., YERSHOV, F. I., IL'IN, K. V., BEKTEMIROV, T. A., IRLIN, I. S., MILLER, G. G., ZAKHAROVA, L. G., PEREKREST, V. V., GERASINA, S. F., and SEVAST'YANOVA, M. V., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Moscow

"Detection of Oncornaviruses in Continuous Tissue Cultures"

Moscow, Voprosy Virusologii, No 4, 1973, pp 411-414

Abstract: Studies were conducted on a number of human and animal continuous tissue cultures maintained in medium 199 containing 10% bovine serum to determine oncornaviruses. Formation of oncornaviruses in the tissue cultures were followed by the appearance of virtal particles in the culture fluid labeled with H3-uridine, susceptibility of their synthesis to low actino-caycin D concentrations, appearance of these particles following inhibition of nuclear material synthesis by bromodeoxyuridine or mitomycin, presence of reverse transcriptase in these particles, presence of 60-70 S RNA in these particles, and electron microscopy. Of the 26 human lines investigated 14 contained type B oncornavirus, and 4 lines type C virus. Eight of the 1/2

estante de la companya del companya de la companya del companya de la companya del la companya de la companya d

USSR

ZHDANOV, V. M., et al., Voprosy Virusologii, No 4, 1973, pp 411-414

14 animal lines studies also showed the presence of oncornaviruses. The source of these viruses in the human lines remains unclear, but the source may have been bovine serum or porcine trypsin used in the preparation of cell suspension. It is noteworthy that type B viruses were isolated in human cultures of epithelial origin, while type C viruses in human cultures of leukotic or sarcomatous origin.

2/2

- 25 -

ASTERNIT PORTUGUES DE SERVICIO DE LA COMPANIO DE L COMPANIO DE COMPANIO DE LA COMPANIO DEL COMPANIO DE LA COMPANIO DE LA COMPANIO DEL COMPANIO DE LA COMPANIO DEL COMPANIO DEL COMPANIO DEL COMPANIO DE LA COMPANIO DEL COM

USSR

UDC 911.3.616.988.26(575.4)

KANTOROVICH, R. A., BYKOVSKIY, A. F., KIRILLOVA, F. M., and SOKOLOVA, N. M.

"Materials of Epidemiological, Virological, and Electron-Microscope Study of Hemorrhagic Fever Foci in Tadzhik SSR"

V sb. "Virusn. bolezni s.-kh. zhivotnykh. Ch. 2 (Virus Diseases of Farm Animals. Part 2), Moscow, 1970, pp 216-217 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.66)

Translation: The study revealed a relationship between Central Asian hemorrhagic fever and the foothill and low mountain type of geographic relief. Primary disease was chiefly observed in men aged 20-40 years, whose jobs required their being outdoors for prolonged periods in fields, pastures, etc. Results are presented for virological, cytological and electron microscope study of the agent.

1/1

O)

7.23 UN	NCLASSIFIED PROCESSING DATE300CT70	
ITLE—SEDIMENTATION CHARACTERI ENCEPHALOMYELITIS VIRUS -U-	ISTICS OF VENEZUELAN EQUINE	į.
	DANOV, V.M., YERSHOV, F.I., CHERNETSOV,	
YU.V. BYKOVSKIY, A.E.	W D'ELETTRALETE COLLEGE AND ALL STEE	
CUNTRY OF INFO-USSR	And the second s	
	f	
GURCEVOPROSY VIRUSULUGII, 19	970, NR 3, PP 330-336	
TE PUBLISHED70		
		ļ
In rect and a new colons and a	NEDICK CATCHER	-
UBJECT AREAS—BIOLOGICAL AND M	MEDICAL SCIENCES	
OPIC TAGS-VENEZUELAN EQUINE E SEDIMENTATION	ENCEPHALITIS VIRUS. TISSUE CULTURE.	
i.		ļ
ENTROL MARKING-NO RESTRICTION	15	
CUMENT CLASSUNCLASSIFIED		
IOXY REEL/FRAME2000/1836	STEP NCUR/0402/70/000/003/0330/0336	
IRC ACCESSION NOAP0125447	CCICICN	
UNCLA:	ASSIFIED	
		ar.
		er i i i i i

V2 013 UNCLASSIFIED

PROCESSING DATE--300CT70

IRC ACCESSION NO-APO125447

STRACT/EXTRACT—(U) GP-O— ABSTRACT. THE VEE VIRUS WAS PROPAGATED IN CHICK EMBRYO CELLS, CONCENTRATED AND PURIFIED. THE OPTIMAL METHOD FOR OBTAINING BIOLOGICALLY ACTIVE VIRUS COMPONENTS CONSISTED IN DEGRADATION OF THE VIRUS WITH ETHER TWEEN. THE PURIFIED VEE VIRUS SEDIMENTED AT ABOUT 380 S IN SUCROSE GRADIENTS, THE NUCLEOID AT ABOUT 160 S. CENTRIFUGATION IN CSCL GRADIENTS SHOWED THE VEE INFECTIOUS MATERIAL TO BAND IN TWO MAIN POSITION: MOST OF THE VIRUS BANDED AT 1.25 G-ML, AND A SMALLER AMOUNT AT 1.42 G-ML. THE MAIN PEAK OF HEMAGGLUTININS WAS DETECTED AT A BUDYANT DENSITY OF 1.25 G-ML. THE SITE OF VIRUS AND ITS COMPONENTS WAS DETERMINED BY RADIOLOGICAL AND BIOLOGICAL TESTS. FACILITY: INSTITUT VIRUSOLOGII IMENI D. 1. IVANKOGO AMN SSR, MOSKVA.

UNCLASSIFIED

USSR

UDC: 621.791.755:669.2/.8:669.14.018.8

BYKHOVSKIY, D. G., Candidate of Technical Sciences, and DANILOV, A. I., Engineer, All-Union Scientific-Research Institute of Electric Welding Equipment

"The Possibility of a Plasma Arc as a Universal Method for Welding Nonferrous Metals and Stainless and Heat-Resisting Grades of Steel"

Moscow, Svarochnoye Proizvodstvo, No 5, May 73, pp 14-16

Abstract: It is shown that plasma welding is a universal method at the present time as is borne out by industrial experience and the results of this study. Using this method, alwinum and its alloys can be welded by direct current. The working current can be regulated from several amperes for welding thin sheet structures to several thousand amperes in welding thick sheet structures. It is also shown that the same plasmatron can be used for working both with direct and reverse polarity current. The UPS-501U4 special unit has been designed for plasma welding. The unit consists of a power source, control box, mechanical stage, and plasmatrons. The following are the technical specifications of this unit: source voltage, 380v; nominal rectified current, 600amp; nominal rectified voltage, 90v; working current control limits, 150-630amp; are voltage, up to 70v; power consumption, 60kw; welding rate, 2-30m/hour; and expenditure of cooling water, 201iters/minute.

1/1

- 61 -

Corrosion

USSR

UDC: 621.771.23.011

KARDONOV, B. A., SHTIRTS, V. V., BYKOVSKIY, G. S., KOROBOV, A. G.

"Rolling of Sheets of Highly Corrosion-Resistant Alloy"

Moscow, Metallurg, No 12, Dec 73, pp 25-27.

Abstract: EP-567 alloy has been recommended for chemical equipment which must be used in corrosive media such as acetic acid. The alloy, containing not over 0.03% C, not over 0.015% Si, not over 1.0% Mn, 14.5-16.5% Cr, 15-17% Mo, 3-4.5% W, not over 1.5% Fe, remainder Ni, has satisfactory ductility in the 950-1220° C temperature range. This alloy has high tensile strength and deformation resistance, resulting from the high content of molybdenum and tungsten. Considering the peculiarities of the alloy, the Central Scientific Research Institute for Ferrous Metallurgy and the Ashinskiy Metallurgical Plant have developed and introduced a technology for production of sheets on a reversing quarto 1500 mill. This article studies the strength and ductility characteristics of the alloy in the 900-1250° C temperature interval. The technology developed can produce hot-rolled strips measuring 1000 by 2000 mm (4-10 mm thick). Sheets 1.5 to 2 mm thick with the same dimensions are produced on a quarto 1400 mill by cold rolling. The rolling forces do not exceed

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

USSR

Kardonov, B. A., Shtirts, V. V., Bykovskiy, G. S., Korobov, A. G., Moscow, Metallurg, No 12, Dec 73, pp 25-27.

the permissible forces for these mills. The corrosion resistance and mechanical properties of the finished sheets satisfy the requirements of consumers. The technological instruction calls for multipass rolling $(60-55) \rightarrow 10 \rightarrow 6 \rightarrow 4$ mm; metal heated to $1180-1200^{\circ}$ C; heating time of metal calculated at 2 min/mm thickness before rolling; temperature at mill exit at least 950° C; compression per pass not over 5 mm.

2/2 - 9

esta de la company de la compa

USSR

UDC 621.791.92:669.35'71.004.12

MILICHENKO, S. L., and BYKOVSKIY, O. G., Zaporoshye Machine Building Institute imeni V. Ya. Chubar

"Structure and Properties of Deposited Aluminum Bronzes"

Moscow, Svarochnoye Proizvodstvo, No 9, Sep 70, pp 28-30

Abstract: Aluminum bronzes, which combine high mechanical and important service properties (good corrosion cavitation resistance, low coefficient of sliding friction, etc.), are finding increasing application in technology as constructional materials and as a deposited layer in the fabrication of bimetallic parts. In the process of the welding and deposition of aluminum two-phase bronzes, various transformations determining the final phase composition, structure, and service properties of the alloys may occur in both the deposited metal and the weld-affected zone. This study shows that the production of an equilibirum structure in deposited aluminum bronzes is not related to specific cooling conditions. Aluminum bronzes of eutectoid composition with 10-15% aluminum may contain a considerable amount of unstable in the phase capable of undergoing nondiffusion martensitic transformation of the due to microplastic deformation. Such transformations

USSR

MILLICENKO, S. L., and BYKOVSKIY, O. G., Svarochenoye Proizvodstvo, No 9, Sep 70, pp 28-30

will raise the elastic properties of microvolumes and, generally, improve the service characteristics of the alloy, particularly under the application of microimpact stresses.

2/2

USSR UDC: 621.373:530.145.6

BYKOVSKIY, V. F., GORELIK, A. V., KULIKOVA, T. A., KUKHMISTROV, LV. S., OSTAPENKO, Ye. P., and SHEVCHENKO, Yu. N.

"Exciting Ion Lasers With an A-C Current of Industrial Frequency"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Engineering, Scientific-Technical Collection, Gas Discharge Devices) 1970, No. 3(19), pp 28-32 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D251)

Translation: The possibility of exciting ionic lasers with an a-c current of industrial frequency is demonstrated. The peculiarities of their operation in single- and triple-phase excitation are investigated. Author's abstract

1/1

- 95 -

USSR

UDC: 621.375.8

BYKOVSKIY, V. F., GORELIN, A. V.

"A Gas Laser"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 4, Feb 71, Author's Certificate No 286819, Division H, filed 26 Dec 68, published 6 Jan 71, p 187

Translation: This Author's Certificate introduces a gas laser which contains a cavity and an active element with electrodes and a discharge channel surrounded by a helix, and coupled through the openings of the helix to a cavity which is free of gas discharge. As a distinguishing feature of the patent, the variety of gases which can be used as the active medium is extended, and the power, efficiency and service life of the device are increased by making the spiral which encloses the discharge in the form of inside-cooled tubing of the "coil" type with an outside surface which does not conduct current.

1/1

- 98 -

USSR UDC 621.375.82

BEREZOVSKIY, V. V., BYKOVSKIY, Yu. A., and REMIZOV, A. N.

"Parameters of Four-Frequency Carbon Dioxide Transverse-Discharge Laser"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 75-77 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D873 from authors' abstract)

Translation: A study was made of tuning conditions for the emission of a CO2 laser in the P and R branches of the vibrational transitions between the 00°1-10°0 and 00°1-02°0 levels with wavelengths of 9.3, 9.6, 10.2, and 10.6 microns. The tuning was performed by means of a prism placed in the cavity. The laser emission spectrum was broadened into the short-wave region by means of second harmonic oscillation by tellurium crystals. The corresponding wavelengths of the harmonics: 4.65, 4.8, 5.1, and 5.3 microns. The transformation efficiency in unfocused beams by uncoated crystals was 0.2 percent. Bibliography with six titles.

1/1

- 48 -

USSR

UDC 621.375.82

BYKOVSKIY, YU. A., LARKIN, A. I., LEBEDEV, YU. S., and MARKILOV, A. A.

"Holographic Broadening of Optical Spectra"

Moscow, V sb. Kvant. elektronika (Quantum Electronics -- collection of works), "Sov. radio," No 1(13), pp 109-111 (from RZh-Fizika, No 7, 1973, Abstract No 7D1117)

Translation: The method of optically matched filtrations is used for the recognition and broadening of optical spectra. A method of changing the form of a recognized spectrum is proposed for localizing the correlation signal and broadening the range of the space frequencies fixed in the filter. The experimental results of the recognition of the models of complex spectra are given. Authors' abstract.

1/1

- 92 -

USSR

UDC: 621.375.9:535

BEREZOVSKIY, V. V., BYKOVSKIY, Yu. A., GONCHAROV, M. I., REZ, I. S.

"Coefficients of Nonlinear Polarization of Proustite and Tellurium"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 105-107

Abstract: Measurements are made of the effective coefficients of nonlinear polarization $d_{31}\sin\theta_m+d_{22}\cos\theta_m$ with pumping propagation in the positive crystallographic quadrant, and the coefficient of nonlinear polarization of tellurium d_{11} with regard to the width of the pumping spectrum (10.6 μm). Pumping was done by a CO₂ laser in single-mode operation with Q-switching. The authors thank S. S. Shalyt and I. I. Farbshteyn for furnishing the high-quality tellurium specimens. Bibliography of twelve titles.

1/1

- 40 -

USSR

UDC 533.933

BYKOVSKIY, YU. A., DEGTYAREV, V. G., DEGTYARENKO, N. N., YELESIN, V. F, LAPTEV, I. D., NEVOLIN, V. N., Moscow Engineering-Physics Institute

"Kinetic Energies of Laser Plasma Ions"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 658-661

Abstract: The mass-spectrometric method was used to study the ion composition and distribution of ions with different z with respect to energy in the last stage of dispersion of a substance. A transit time mass-spectrometer with an electrostatic analyzer was used in the experiments. A study was made of the maximum energy of the ions E_{max} of a laser plasma as a function of the radiation flux density in the range of $q \sim 10^8 - 10^{11}$ watts/cm². The value of E_{max} was obtained as a function of the ion mass. The domain of weak dependence of E_{max} was determined by the energy distributions of the ions with different charge. Values obtained for q_1 , q_2 (the flux densities) and $\gamma_1 \alpha$, α_1 ($E_1 \sim q^{\alpha}$ where n is the total number of charged particles and $E_{\text{max}} \sim q^{(1)}$) are tabulated for $E_2 \sim q^{(1)}$. The value of $E_3 \sim q^{(2)}$ was detected. This watts/cm², no region of weak dependence of $E_3 \sim q^{(2)}$ was detected. This

USSR

BYKOVSKIY, YU. A., et al., Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 658-661

agees with the calculated values of $\mathbf{q_1^t}$ and $\mathbf{q_2^t}$ (the boundary values of the radiation flux density range of the gigantic laser pulse in which phase transition conditions exist).

2/2

- 146 -

USSR UDC: 621.378.385

ASHMARIN, I. I., BYKOVSKIY, Yu. A., DEGTYARENKO, N. N., YELESIN, V. F., LARKIN, A. I., SIPAYLO, I. P., Moscow Physical Engineering Institute

"Pulse Holography Study of Gas Breakdown in Front of a Laser Beam"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 11, Nov 71, pp 2369-2377

Abstract: The paper is devoted to a study of phenomena which take place in air and in helium at different pressures when the output from a ruby laser is focused on lead, copper, and aluminum targets. The method of pulse holography is used for these purposes. The efficacy of the holographic method for studying these phenomena is demonstrated. It is observed that the axis of symmetry of the beam at atmospheric pressure deviates from the normal to the target in the case of oblique incidence of the laser beam. This effect can be attributed

1/2

USSR

ASHMARIN, I. I. et al., Zhurnal Tekhnicheskoy Fiziki, No 11, Nov 71, pp 2369-2377

to localized absorption of the energy of laser emission on the boundary of the beam. It is found that the effect of the laser beam on the probability of gas breakdown in front of the target can be attributed to the ionizing action of ultraviolet radiation. An investigation of the way that the magnitude of the effect depends on the target material and the composition of the ambient gas confirms this hypothesis. The authors thank D. M. Samoylovich and R. V. Ryabov for furnishing the photographic materials and for constructive criticism. Nine figures, one table, bibliography of 14 titles.

2/2

- 69 -

USSR

UDC: 621.373:535(206.1)

BYKOVSKIY, Yu. A., VELICHANSKIY, V. L., MASLOV, V. A., and SMIRNOV, V. L.

"A Method for Increasing the Coherence of Pulsed, Semiconductor Laser Radiation"

Leningrad, Optika i Spektroskopiya, vol 32, No 3, 1972, pp 621-623 Abstract: This brief communication investigates the possibility of compensating the increase in wavelength of a pulsed laser due to heating of the active region through the pressure created by a barium zirconate piezoceramic element. For short pulses, the temperature increase and the laser wavelength increase are proportional to the square root of the time. But with application of pressure to the injection laser, the radiation spectrum shifts toward the short wavelengths. Consequently, the applied pressure can compensate the temperature change of the laser radiation wavelength during a pulse of the injection current, thus resulting in an improved time coherence of the laser. The design of a diode containing the piezoceramic element is shown. Experiments performed by the authors are described. They acknowledge their gratitude to Yu. P. Zakharov for the specimens and to V. V. Nikitin for his useful comments. 1/1

UDC

DC 621.039.5.001.4

USSR

BEREZOVSKIY, V. V., BYKOVSKIY, Yu. A., GRIDIN, V. A., KCKOREV, L. S., SHELAGIN, Yu. N.

"Flaw Detection on a Fuel Element Model by Means of a Laser"

V sb. Vopr. teplofiz. yadern. reaktorov (Problems in the Thermal Physics of Nuclear Reactors--collection of works), vyp. 3, Moscow, Atomizdat, 1971, pp 93-100 (from RZh-Elektrotekhnika i Energetika, No 9, Sep 71, Abstract No 9U188)

Translation: The authors discuss the use of an infrared $\rm CO_2-N_2-He$ laser with a wavelength of $10.6~\mu$. The parameters of laser emission enabled focusing on a fairly small area ($\rm \sim 0.001~mm^2$), thus improving the resolution of thermal devices. A laser beam with a power of 6 W in the continuous mode was used to detect flaws (pits in the casing and peeling of the fuel in nuclear fuel elements). Peeling in the form of a spot of arbitrary shape with a concentrated heat source is considered. The temperature of the casing rises when the laser beam hits a region where there is peeling. A pickup determines the temperature rise. It is found

1/2

USSR

BEREZOVSKIY, V. V., et al., Vopr. teplofiz. yadern. reaktorov, vyp. 3, Moscow, Atomizdat, 1971, pp 93-100

that an increase in the rate of beam displacement entails an increase in the required power of the source, a rise in maximum temperature and more severe requirements for the time lag of the temperature pickup. more since from a laser with a power of 1 kW was focused by a field of Emission from a laser with a power of 1 kW was focused by a field of $3\cdot10^{5}$ W/cm² on an area of $2\cdot10^{-3}$ mm². Three illustrations, two tables, bibliography of five titles. A. M. Bovshovskiy.

2/2

<u>s springs standard and a properties of the standard and the spring of the standard and the spring of the spring o</u>

Masers and Lasers

USSR

UDC 621.039.5.001.4

BEREZOVSKIY, V. V., BYKOVSKIY, YU. A., GRIDIN, V. A., KOKOREV, L. S., SHELAGIN, YU. N.

"Laser Detection of Defects in a Fuel Element Model"

Vopr. teplofiz. yadern. reaktorov -- V sb. (Problems of Thermophysical Nuclear Reactors -- Collection of Works), vyp. 3, Moscow, Atomizdat Press, 1971, pp 93-100 (from RZh-Teploenergetika, No 9, Sep 71, Abstract No 90188)

Translation: Utilization of a CO₂-N₂-He gas infrared laser with a wavelength of 10.6 microns is discussed. The parameters of the laser radiation permitted focusing of it on a sufficiently small area (~ 0.001 mm²) and, at the same time, increasing the resolution of the thermal devices. A 6 watt laser beam was used to detect defects (holes in the jacket, exfoliation of the fuel). Exfoliation in the form of a spot of arbitrary shape with a concentrated heat source is investigated. When the laser beam hits the exfoliation region, the jacket temperature rises. The rise in temperature is recorded by a sensor. It is established that with an increase in the beam displacement rate, the necessary power supply increases, the maximum temperature increases, and the requirements on the inertia of the temperature sensor increases. Focusing one kilowatt 1/2

USSR

BEREZOVSKIY, V. V., et al., <u>Vopr. teplofiz. yadern. reaktorov</u>, vyp. 3, Moscow, **Atomizdat** Press, 1971, pp 93-100

of laser radiation created a field of $3\cdot10^5$ watts/cm 2 over an area of $2\cdot10^{-3}$ mm 2 . There are 3 illustrations, 2 tables and a 5-entry bibliography.

2/2

USSR

UDC 621.375.9:535

BYKOVSKIY, Yu. A., VELICHANSKIY, V. L., GONCHAROV, I. G., MASLOV, V. A., NIKITIN V V

"Pulsed Semiconductor Laser Used as a High-Resolution Spectroscope"

Leningrad, Optika i Spektroskopiya, No. 3, Mar 71, pp 508-510

Abstract: A method is proposed for graduating a pulsed laser-spectroscope in the optical range with the aid of a Fabry-Perot interferometer. It is pointed out that a unique combination of properties of semiconductor lasers make them promising for high-resolution spectroscopy. The radiation of semiconductor lasers covers a wide spectral range due to a large selection of materials, and any semiconductor laser evenly retunes its frequency with a change in temperature or pressure within the limits permissible for lasers of other types. Also, the line width of a semiconductor laser is sufficiently small; for example, the ratio $\Delta v/v = 10^{-9}$, where Δv is the line width and v is the basic frequency, for injection lasers of GaAs and $Pb_{0.88}Sn_{0.12}Te$. In this work a pulsed GaAs scanning semiconductor laser was used to observe absorption at the resonance absorption line in cesium-133. The nature in the change of the length of the genera-

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2" BYKOVSKIY, Yu. A., et al, Optika i spektroskopiya, No. 3, Mar 71, pp 508-510

tion wave of the laser with time was investigated in order to graduate the spectroscope and be able to measure the frequency interval between absorption lines and the width of these lines. A block diagram of the calibration device is shown. The radiation of the laser diode forms into a parallel beam into which the Fabry-Perot interferometer is placed with a resolution of $5 \cdot 10^5$. The distance between absorption lines and their width are functions of the position of the lines on an oscillogram relative to the beginning of the pulse, and this is related to the nonlinear dependence of the wavelength of the laser radiation on time. The reason for this is that generation modes of the laser are determined by the optical length of its resonator. The pulsed excitation leads to a nonlinear variation of the increase in temperature of the active region of the injection laser with time. This produces a change in the refractive index of the active medium which basically determines the change in the generation wavelength. The distance between absorption lines was 9.2 ± 0.1 GHz, corresponding to a value obtained by radiospectroscopy methods.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520008-2"

 \mathcal{B}

Lasers and Masers

USSR

UDC: 621.315.592

BYKOVSKIY, Yu.A., VELICHANSKIY, V.L., GONCHAROV, I.G., and MASLOV, V.A.

"Using the Fabry-Pérot Resonator for Stabilizing Injection Laser Frequency"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 4, 1970, pp 685-689

Abstract: This paper is the continuation of an earlier one written by the same four authors (ZhETF, 57, 1109, 1969) in which they gave preliminary results in stabilizing semiconductor laser frequencies by an external resonator. The present article gives the detailed results of investigating the spectral characteristics and the frequency stabilization of injector lasers through the Fabry-Pérot interferometer. The lasers under test were operated in the continuous regime, and their spectral characteristics were studied as a function of the injection current, which determines the active region temperature under steady-state conditions. The laser radiation spectrum was first investigated on a DFS-12 spectrograph with a resolution of about 1 Å to select specimens were GaAs with a length and width of 50 to 200 microns, prepared by the liquid epitaxy method. To guarantee continuous operation, the lasers were placed in a cryostat in a nitrogen atmosphere, with the p and n parts of the diode in contact with the cooling element. Threshold currents ranged

USSR

BYKOVSKIY, Yu.A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 4, 1970, pp 685-689

from 150 to 500 ma depending on the quality of the specimen and its dimensions. The oscillation wavelength at the threshold covered a range of 8625 to 8715 Å for the various diodes. A block diagram of the frequency stabilizing equipment is given. The authors thank V.V. Nikitin for his comments and Yu.P. Zakharov for preparing the lasers.

2/2

- 35 -

UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--Q FACTOR MODULATOR OF A LASER RESONATOR BASED ON A FABRY PEROT
INTERFEROMETER WITH ALTERNATING ABSORPT ON (MODULIATOR DOBROTNOSTI
AUTHOR-(03)-GONCHAROV, I.G., MASLOV, V.A., BYKOVSKIY, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, JAN 1970, PP 136-138

DATE PUBLISHED ---- 70

SUBJECT AREAS--PHYSICS

ŧ

TOPIC TAGS--HELIUM NEON LASER, FABRY PEROT INTERFEROMETER, & FACTOR

CONTROL MAPKING -- NO PESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY PEEL/FRAME--1979/1610

STEP NO--UR/0368/70/012/000/0136/0138

CIPC ACCESSION NO--APO047932

UNCLASSIFIED

i kasifost dinia unitumbiliningi kombolish, ubuga bitang kanhula kebuatka kandida Luish Coma medicinik di Ki

2/2 020 UNCLASSIFIED PROCESSING DATE--19SEP70 CIRC ACCESSION NO--APOD47932 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF EXPERIMENTS IN WHICH THE 4 FACTOR OF A HELIUM NEON LASER WAS MODULATED AT A WAYELENGTH

WHICH THE A FACTOR OF A HELIUM NEON LASER WAS MODULATED AT A WAVELENGTH OF 3.39 MU M AS THE RESULT OF POWER ABSORPTION BY NONEQUILIBRIUM FREE CURRENT CARRIERS IN ITS RESONATOR. A PLANE PARALLEL GERMANIUM PLATE WAS USED AS ONE OF THE RESONATOR MIRRORS AND A FABRY PEROT INTERFEROMETER POSITIONED AT THE FOCUS OF A QUARTZ LENS AS THE OTHER.

HATTACCTETET

USSR

WC 534.1+539.3

BYKOVTSEV, G. I., (Voronezh), and KRETOVA, L. D., (Voronezh)

"Shock Waves Propagation in Elastic Plastic Media"

Moscow, Prikladnaya Matentika i Mekhanika, Vol 36, No 1, 1972, pp 106-116

Abstract: The problem of shock wave propagation in elastic-plastic media is considered. It is shown that neutral shock waves on which plastic deformations are continuous, and waves on which plastic deformations are discontinuous can exist in ideal and hardening elastic media. Conditions of existence of the second type waves are formulated and velocities of all mentioned waves in ideal-plastic bodies are determined at arbitrary prominent yield and Tresca conditions, and also in hardenening bodies at kinematic andisotropic hardening. Basic relationships for discontinuities in transition through waves surfaces are derived. The behavior of shock waves in propagation process under the von Mises and Tresca yield conditions is investigated using the secondorder kinematic compatibility conditions. It is shown that shock waves intensities vary in accordance with laws of geometric optics.

1/1

PROCESSING DATE+-11SEP70 UNCLASSIFIED 015 TITLE--CRYSTAL STRUCTURES OF BARIUM MOLYBDATE AND BARIUM TUNGSTATE -U-

AUTHOR-BYLICHKINA, T.I., SOLEVA, L.I., POBEDIMSKAYA, YE.A., PORAYKOSHITS,

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1) 165-7

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, BARIUM COMPOUND, TUNGSTATE, X RAY DIFFRACTION, MOLYBDATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1986/0017

STEP NO--UR/0070/70/015/001/0165/0167

CIRC ACCESSION NO--APO102117

UNCLASSIFIED

2/2 015 UNCLASSIFIED CIRC ACCESSION NO--APO102117 PROCESSING DATE--11SEP70 ABSTRACT/EXTRACT--(µ) GP-0-ABSTRACT. THE TITLE CRYSTALS WERE SYNTHESIZED HYDROTHERMALLY. RESULTS OF THE GONIOMETRIC MEASUREMENTS AND UNIT CELL PARAMETERS COORDINATES OF THE ATOMS, AND INTERAT. DISTANCES OBTAINED FROM X RAY DIFFRACTION DIAGRAMS ARE GIVEN FOR BAWD SUB4, BAMDD SUB4, CAWO SUB4, SRWO SUB4, SRMOO SUB4, AND COMOO SUB4. THE LATTICE PARAMETERS FOR THE TITLE CRYSTALS ARE A EQUALS 5.614 PLUS OR MINUS 0.003 AND C EQUALS 12.719 PLUS OR EQUAL 0.003 ANGSTROM FOR BAWO SUB4 AND 4 EQUALS 5.62 PLUS OR MINUS 0.03 AND C EQUALS 12.82 PLUS OR MINUS 0.03 ANGSTROM FOR BAMOD SUB4. THE INTERAT. DISTANCES IN THE BAWO SUB4 POLYHEDRON ARE CLOSE TO THOSE IN SRWO SUB4. AND THE INTERAT. DISTANCES IN BAMOO SUB4 ARE CLOSE TO THOSE IN SRMOO SUB4 AND COMOO SUB4. UNCLASSIFIED

2

USSR

WDC 535.33

SEVCHENKO, A. N., OL'DEKOP, YU. A., ZYAT'KOV, I. P., BYLINA, G. S., SAGAYDAK, D. I., SHINGEL', I. A.

"Investigation of the IR Spectra of Poly-n-Formylstyrene, Styrene Copolymers, n-Formylstyrene, and Some of Their Derivatives"

Minsk, Zhurnal Prikladnoy Spektroskopii (Journal of Applied Spectroscopy), Vol 13, No 4, Oct 1970, p 633-638

Abstract: The authors study the ir spectra of several styrene (S) and n-formylstyrene (FS) copolymers containing various aldehyde groups as well as several aldehyde group derivatives: namely, poly-n-formylstyrene (PFS); copolymers I-V containing 23.8, 31.9, 36.0, 40.2, and 456 mole % FS, respectively; Schiff copolymers I and V; phenylhydrazone copolymer IV; azine copolymer I, III. IV, and V; oxime copolymers IV and V; and acetal - methyl alcohol copolymer III. The polymer samples were ground together with a quantity of KBr and then pressed into tablets. The spectra were taken with a UR-10 spectrophotometer. The spectral regions studied were 3100 to 2700 cm⁻¹ and 2000 to 700 cm⁻¹.

1/2

- 58 **-**

USSR

SEVCHENKO, A. N. et al, Zhurnal Prikladnoy Spektroskopii, Vol 13, No 4, Oct 1970, p 633-638

The ir spectra of S, FS, and PFS are analyzed, compared, and interpreted in detail. The ir absorption spectra are plotted and presented in the form of curves. Numerous bands are identified and related to specific bond vibrations and atomic groups.

The authors thank L. K. Burykina for assistance in preparing the samples. Orig. art. has 4 figs. and 7 refs.

2/2

TITLE—IMPROVED PROCESS FOR OBTAINING ACID PERESTERS FROM DIBASIC

CARBOXYLIC ACIDS -U-

AUTHOR-(G3)-CLDEKGP, YU.A., BYLINA, G.S., BULGICHIK, ZH.I.

CCUNTRY OF INFO-USSR

SOURCE-VESTI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (2), 109-10

DATE PUBLISHEC ---- 70

SUBJECT AREAS--CHEMISTRY

TGPIC TAGS--ANHYDRIDE, DICARBEXYLIC ACID, CARBOXYLIC ACID ESTER, PHTHALIC ANHYDRIDE, MALEIC ANHYDRIDE, CYCLIC GROUP, BENZENE DERIVATIVE, ETHYLENE, METHYLENE

CENTREL MARKING-NO RESTRICTIONS

DECUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3005/0061

STEP NO--UR/0419/70/000/002/0109/0110

CIRC ACCESSION NO--APO132356

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70 CIRC ACCESSION NG--APO132356
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. CYCLIC ANHYDRIDES OF DICARBOXYLIC ACICS TREATED WITH 1.1 EGUIVS. TERT BUODH IN THE PRESENCE OF ACONA (1PERCENT) GR PYRIDINE (4-5PERCENT) 6 HR AT 48-50DEGREES GAVE ME SUB3 COU SUB2 CXCG SUB2 H (X, PERCENT YIELD, M.P. AND STARTING ANHYDRIDE GIVEN): C SUB6 H SUB4, 95.4, 99.5-100.CDEGREES, PHTHALIC; CH:CH, 94.8, 116-18DEGREES, MALEIC; (CH SUB2) SUB2, 98.4, 58-9DEGREES, SUCCINIC; (CH SUB2) SUB3, 98.6, 39-40DEGREES, GLUTARIC. FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

BYLINKINA, Ye. S.

10

cation

AYS OF IMPROVING THE SYSTEM OF PURIFICATION AND STERILIZATION OF

MS AIR IN THE MANUFACTURE OF ANTIBIOTICS.

NL. Moting, L. K. Entoya & S. Bylinking

Milonal Institution of Antibiotics, Moscow, USSR.

G10 - 12

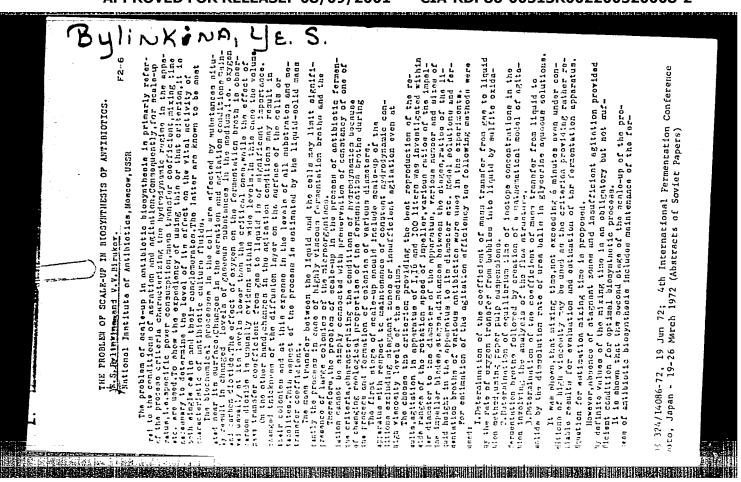
erandingan salah kanak birah kanakan birah kanak birah kanak birah kanak birah birah birah birah kanak birah k

There has been determined a special method to estimate the effi-Hency of the collection of the particles by filtermaterials. For this pur-use special stands were constructed. Various methods of establishment the afficiency of the collection of the particles have been tested. During these experiments were taken the particles with diameters from 0,3 till I,5 mic-tens. Among the results of the values of efficiency of the filter materials the definite correction has been achived. The simplified theoretical method has suggested for the estimation of the efficiency of various filter materials his method allows to determine the level of filtermaterials as well as the jownfall of the pressure of the air. For the production of antibiotics apellal method was worked out to determine the thermodynamic factors, the state if the air such as temperature, pressure and so on. The necessity to deter-ine the parameters of the air in different climate conditions was shown in his work as well. The experiments were made to determine the properties of arious types of filtermaterials, such as natural, synthetic and other mate-Hale. As a regult of the experiment the most effective materials of a thin Heaning of the air were selected. Following this theoretical method the patameters of the filtration of the air were determined by means of the selecis materials. The practical tests have shown a great efficiency in the col lection of polution particles by filter materials. The term of their service is rather long. On the base of the developed work the stability of exploitation of this plant for sterilization of the air depending on the uses theradynamic conditions and filter eqipment has been successfully achieved.

OOE 324/14086-72, 19 Jun 72; 4th International Fernantation Conference Kvoto, Japan - 19-26 March 1972 (Abstracts of Soviet Parets)

CIA-RDP86-00513R002200520008-2"

APPROVED FOR RELEASE: 08/09/2001



USSR

UDC: 8.74

BYLINO, N. M., NAATS, I. E., TARUSIN, G. N.

"Concerning a Class-Scheduling Algorithm"

Izv. Tomsk. politekhn. in-ta, 1972, 223, pp 44-47 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V661)

Translation: A problem-solving algorithm is presented which was checked out in scheduling day classes at Tomsk Polytechnical Institute (1500 instructors, 600 academic groups, 500 classrooms) with a positive result.

1/1

- 55 -

TITLE--EFFECT OF IRRADIATION OF THE DONOR ON THE FREQUENCY OF THE AUTHOR-1021 NOWITH NONSELECTIVE MARKERS U-

AUTHOR-(03)-NOVITSKAYA, M.A., TROITSKIY, N.A., BYLINSKIY, A.F.

COUNTRY OF INFO--USSR

SOURCE-VESTSI AKAD. NAVUK BELARUS. SSR, SER BIYAL. NAVUK 1970. (2), 106-3

DATE PUBLISHED----70

SUBJECT AREAS---PHYSICS, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NEUTRON IRRADIATION, CHROMOSOME, MADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3007/0213

STEP NO--UR/0440/70/000/002/0106/0103

CIRC ACCESSION NO--AP0135709

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--27MOV70 CIRC ACCESSION NO--APO135709 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IRRADN. OF THE DONOR WITH 1 MEV NEUTRONS CREATES A SHARP INCREASE IN THE NO. OF RECOMBINED PAIRS OF THE SELECTIVE MARKER ARG PLUS SM. THE PERCENTAGE OF RECOMBINED PAIRS WAS 2.6 TIMES GREATER THAN IN THE CASE WHEN A NONIRRADIATED DONOR WAS TAKEN FOR CROSSING. EXPTS. SHOWED THAT THE INCREASE IN RECOMBINED PAIRS CANNOT, HOWEVER, BE EXPLAINED MERELY BY THE INCREASE IN EFFECTIVE PAIRS. IRRADN. OF THE DONOR WITH NEUTRONS PROBABLY BRINGS ABOUT A CHANGE IN ITS CHROMOSOMES WHICH, IN TURN, INCREASES THE FREQUENCY OF RECOMBINATION IN THE MEROZYGOTE. IT CAN BE ASSUMED THAT IRRADN. WITH MEUTRONS INDUCES AT LEAST 2 TYPES OF DONOR CHROMOSOME DAMAGE. FACILITY: INST. GENET. TSITOL., MINSK, USSR.

on a linear confirme of Different accompanies (The confirming Alberta Confirming).

UNCLASSIFIED

USSR

UDC 517.926.4

BYLOV, B. F.

"Simultaneous Stability of the Characteristic Indexes of Mutually Conjugate Systems of Linear Differential Equations"

Minsk, Differentsial'nyye Uravneniya, Vol 6, No 6, 1970, pp 943-947

Abstract: This article contains an investigation of an initial system x = A(t) x and the system conjugate to it: y = -A*(t)y, where A is an $(n \times x n)$ -matrix, X and Y are vectors. Necessary and sufficient conditions for simultaneous stability of the indexes of the initial and conjugate systems are imposed on the normal and ordered base X (or on the diagonal coefficients of the matrix A in case of triangularity).

An example of a system with stable indexes the conjugate system to which does not have this property is also presented.

1/1

APO048424_

Abstracting Service: Ref. Code: INTERNAT. AEROSPACE AEST 5-70 71 R 0376

A70-25303 # Reduction to block-triangular form and necessary and sufficient conditions of stability of the characteristic indices of a linear system of differential equations (Privadenia k blochno-treugol'nomu vidu i neobkhodimya i dostatochnye usloviia ustoichivosti kharakteristicheskikh pokazatelei lineinoi sistemy differentsial'nykh urzvnenii). B. F. Bylov (Moskovskii Aviatsionnyi Tekhnologicheskii Institut, Moscow, USSR). Differentsial'nye Uravneniia, vol. 6, Feb. 1970, p. 243-252. 7 refs. In Russian.

Demonstration of a relation between reduction to block form and derivation of necessary and sufficient conditions of stability of the indices of a triangular system. It is proven that a system possessing a basis with integrally separate sets of functions can be reduced by a Liapunov transformation to a block form, where each block is an upper triangular matrix satisfying the condition that the upper and lower functions of a set of integrally separate functions are also upper and lower functions, respectively, of the set of diagonal coefficients of the upper triangular matrix.

A.B.K.

4

REEL/FRAME 19800132 40

21

USSR

UDC 621.396.6-181.5

BYLOV, K. V., GLAZKOV, YU. B., OGANEZOV, R. KH., STOVEA, V. I., SOKOLOV, V. P., STRAKHOV, V. S.

"Utilization of 2T603 Crystals to Create Medium Power Film Mybrid Circuits"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Engineering. Scientific and Technical Collection. Semiconductor Devices), 1970, vyp. 6 (56), pp 118-120 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10V189)

Translation: The structural design of a caseless version of a medium power semiconductor triode based on the series semiconductor triode type 2T603 of npn structure: is described. Results are presented from measuring the thermal resistance when mounting the semiconductor triode on the backing of the microcircuit by two methods — soldering (with indirect pulse heating) and microwelding. It is demonstrated that the most effective means of mounting the semiconductor triode on the backing is solder. The magnitude of the thermal resistance drops significantly on increasing the thermal conductivity of the backing material. There are 2 illustrations and I table.

1/1